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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,267	07/30/2003	Horst Schmidt	67028-014	8706

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EXAMINER

PONTAINE, MONICA A

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,267

Applicant(s)

SCHMIDT, HORST

Examiner

Monica A. Fontaine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6, 12-14, 16-22 and 24-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-3, 5, 6, 12-14, 16-18 and 26-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 19-22, 24, 25 and 30-32 is/are rejected.
- 7) ☒ Claim(s) 33 and 34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 060304.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-3, 5-6, 12-14, 16-18, and 26-29, drawn to a mold tool assembly, classified in class 425, subclass 542+.
- II. Claims 19-22, 24-25, and 30-34, drawn to a method of molding, classified in class 264, subclass 328.8.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process, such as one that does not require receiving molten material into a passage adjacent the mold cavity.

During a telephone conversation with John Siragusa on 26 May 2005 a provisional election was made without oral traverse to prosecute the invention of Group II, claims 19-22, 24-25, and 30-34. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-3, 5-6, 12-14, 16-18, and 26-29 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-22, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida et al. (U.S. Patent 5,340,528), in view of Kumagai et al. (EP 662383). Regarding Claim 19, Machida et al., hereafter "Machida," show that it is known to carry out a method of molding a molded article (Abstract) comprising introducing molten material into a mold cavity (Column 5, lines 10-13); receiving molten material into a passage adjacent said mold cavity by displacing a movable member comprising a face defining a portion of the mold cavity (Column 5, lines 13-27); and displacing molten material from the adjacent passage toward said mold cavity with said movable member responsive to a biasing force to compensate for changes in volume caused by solidification of the molten material (Column 5, lines 28-49). Machida does not show exerting the biasing force using springs; Machida shows using hydraulic mechanisms (Column 5, lines 28-49). Kumagai et al., hereafter "Kumagai," show that it is known to carry out a method of molding including using a plurality of bevel springs to exert a biasing force (Column 14, lines 12-18). Kumagai and Machida are combinable because they are concerned with a similar technical field, namely, methods of adjusting internal mold pressure. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Kumagai's springs to adjust the biasing force during Machida's molding process to avoid the need for complicated hydraulic equipment.

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Regarding Claim 20, Machida shows the process as claimed as discussed in the rejection of Claim 19 above, including a method comprising compensating for local volume changes by pushing molten material from said adjacent passage into said mold cavity (Column 6, lines 16-25), meeting applicant's claim.

Regarding Claim 21, Machida shows the process as claimed as discussed in the rejection of Claim 19 above, including a method comprising maintaining a desired material volume locally by pushing molten material into the mold cavity (Column 6, lines 16-25, 39-56), meeting applicant's claim.

Regarding Claim 22, Machida shows the process as claimed as discussed in the rejection of Claims 19 and 21 above, including a method wherein the molten material is displaced from the passage proportionate to shrinkage of the molten material during solidification (Column 6, lines 16-25, 39-56), meeting applicant's claim.

Regarding Claim 24, Machida shows the process as claimed as discussed in the rejection of Claim 19 above, including a method comprising the step of applying a force with said movable member to limit the amount of molten material received within the adjacent passage (Column 5, lines 16-48), meeting applicant's claim.

Regarding Claim 25, Machida shows the process as claimed as discussed in the rejection of Claims 19 and 24 above, including a method comprising the step of applying a force with said movable member to push molten material from said adjacent passage proportionate to a reduction in local molten material volume within the mold cavity (Column 6, lines 16-25, 39-56), meeting applicant's claim.

Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida, in view of Suzuki et al. (U.S. Patent 4,497,359). Regarding Claim 30, Machida shows that it is known to carry out a method [of] molding a molded article (Abstract) comprising introducing molten material into a mold cavity (Column 5, lines 10-13); receiving a predetermined amount of molten material into a passage adjacent said mold cavity (Column 5, lines 13-27); displacing said predetermined amount of material from said passage and into said mold cavity during solidification of said molten material (Column 5, lines 28-49). Machida does not show determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure. Suzuki et al., hereafter "Suzuki," show that it is known to carry out a method of molding comprising determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure (Column 5, lines 14-36; Column 6, lines 27-39, 42-68). Suzuki and Machida are combinable because they are concerned with a similar technical field, namely, methods of controlling internal mold pressure and material volume during molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Suzuki's method of controlling the amount of material received in a mold passage during Machida's molding process in order to avoid overfilling or underfilling the mold cavity.

Regarding Claim 31, Machida shows the process as claimed as discussed in the rejection of Claim 30 above, but he does not show determining an amount of height loss using the claimed formula. Suzuki shows that it is known to carry out a method of molding comprising determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure (Column 5, lines 14-36; Column

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6, lines 27-39, 42-68). The examiner presently takes official notice that the claimed formula for the new height of the mass of material is a practically simple relationship between the volume of the shrink and the area of the passage (presumed to be cylindrical). It is believed that it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to carry out Machida's process using the formula given to calculate the new height of the material in Suzuki, as the values used in the calculation are known geometrical concepts that can easily be manipulated to give any number of values; in this case, the new height of the shrunk mass of material.

Regarding Claim 32, Machida shows the process as claimed as discussed in the rejection of Claim 30 above, but he does not show using a specific relationship between material shrinkage and travel of the movable member. Suzuki shows that it is known to carry out a method comprising providing for travel of a movable member within the passage substantially equal to twice the determined amount of height loss caused by material shrinkage (Column 5, lines 14-36). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Suzuki's relationship during Machida's moldint process in order to avoid overfilling or underfilling the mold cavity.

Allowable Subject Matter

Claims 33 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Fontaine whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maf

Maf
May 31, 2005

Michael P. Colaianni

**MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER**